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ABSTRACT

To establish a procedure for use in examining characteristics of future participants in adult education, a study focused on one characteristic--the highest level of education completed among participants in adult education activities. The process followed was to obtain reports from the National Center for Education Statitstics (NCES) (an official source), identify subject matter of particular interest, extract and compare pertinent data, identify trends, and project accordingly. Projected rates of participation were determined for four levels of educational attainment: less than four years of high school, four years of high school, one to three years of college, and four or more years of college. Continued monitoring and updating of projections is considered imperative since the validity of the projections is in doubt due to such problems as changes in data bases and assumptions made by the surveys. Repeated application of the process used is recommended to complete a profile of future participants in adult education. (Extensive data tables are provided. An appendix also contains a comparison of data from the NCES series of reports, "Projections of Education Statistics to...") (YLB)

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FUTURE PARTICIPANTS

IN

ADULT EDUCATION

Delivered to the

Lifelong Learning Research Conference

University of Maryland

February 7, 1981

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Syracuse University

CE 028 808

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INTRODUCTION

What will be the characteristics of future participants in adult education in the United States?

This question may be addressed by first answering the following:

What are the characteristics of present participants in adult education programs in the United States?

Are there discernable trends in the distribution of these characteristics?

Can these trends be used as the basis of accurate projections?

A complete list of characteristics would surely include physical and psychological as well as the usual demographic data. The state of physical and mental well being, age-related sensory deficiencies, positive or negative disengagement of the elderly, etc., all effect participation in adult education. Demographics would include age, sex, income, occupation, marital status, number of children, regional and metropolitan location, etc.

By focusing on just one characteristic, it is possible to establish a procedure to be used in examining almost any of the others. The highest level of education completed among participants in adult education activities will be examined for this purpose.

METHODOLOGY

Date concerning participants has been gathered by the National Center for Education Statistics. (NCES)

Trends were calculated according to the method used by NCES: The "Average percent of yearly change" equals the percent of change between the first and last years, divided by the number of years elapsed. These trends were used to project through 1990, as shown on the chart on the following page.

The sources for this, as well as the succeeding charts or graphs on participation in adult education, were the reports issued under the sponsorship of the National Center for Education Statistics. The first three were published by the U.S. Government Printing Office. The year of publication follows the title:

Table 1, p. 10, Participation in Adult Education Final Report, 1969, 1974.

Table 1, p. 24, Participation in Adult Education Final Report, 1972, 1976.

Table A, p. 4; Table E, p. 6; Table 10, p. 31, Participation in Adult Education Final Report, 1975, 1978.

Table 1, (unpaginated), "Participation in Adult Education Final Report, 1978", (unpublished).

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION (17 years of age and above)

HIGHEST LEVEL OF EDUCATION COMPLETED	ENROLLMENT IN THOUSANDS								% CHANGE 1969-1978	AVERAGE % OF YEARLY CHANGE
		ACTUAL				PROJECTED				
	1969	1972	1975	1978	1981	1984	1987	1990		
1. Total population	130215	138865	146602	154496	164090	174279	185101	196595	+18.65	+ 2.07
2. Total participants	13041	15734	17059	19338	22453	26070	30269	35145	+48.29	+ 5.37
3. (2) as % of (1)	10.01	11.33	11.64	12.52	13.68	14.96	16.35	17.88		
Less than 4 yrs H.S.										
4. All adults	57381	55730	53588	52091	50498	48953	47455	46003	- 9.22	- 1.02
5. (4) as % of (1)	44.07	40.13	36.55	33.72	30.77	28.09	25.64	23.40		
6. Participants	1985	2066	1756	2029	2044	2059	2074	2090	+ 2.20	+ .25
7. (6) as % of (4)	3.46	3.71	3.15	3.90	4.05	4.21	4.37	4.54		
8. (6) as % of (2)	15.22	13.13	10.29	10.49	9.10	7.90	6.85	5.95		
9. (6) as % of (1)	1.51	1.49	1.20	1.31	1.25	1.18	1.12	1.06		
4 years High School										
10. All Adults	44680	49679	53755	56847	62009	67639	73781	80480	+27.23	+3.03
11. (10) as % of (1)	34.30	35.78	36.67	36.80	37.79	38.81	39.86	40.94		
12. Participants	5067	5916	6396	6641	7328	8086	8923	9847	+31.06	+3.45
13. (12) as % of (10)	11.34	11.91	11.90	11.68	11.82	11.95	12.09	12.24		
14. (12) as % of (2)	38.85	37.60	37.49	34.34	32.64	31.04	29.48	28.02		
15. (12) as % of (1)	3.89	4.26	4.36	4.30	4.47	4.64	4.82	5.01		
1-3 years College										
16. All adults	15537	18407	21002	24046	28437	33630	39771	47033	+54.77	+ 6.09
17. (16) as % of (1)	11.93	13.26	14.33	15.56	17.33	19.30	21.49	23.92		
18. Participants	2576	3373	3687	4622	5846	7394	9352	11828	+79.43	+ 8.83
19. (18) as % of (16)	16.58	18.32	17.56	19.22	20.56	21.99	23.51	25.15		
20. (18) as % of (2)	19.75	21.44	21.61	23.90	26.04	28.36	30.90	33.65		
21. (18) as % of (1)	1.97	2.43	2.51	2.99	3.56	4.24	5.05	6.02		
4 + years College										
22. All adults	12655	15049	18457	21512	26531	32721	40355	49770	+69.99	+ 7.78
23. (22) as % of (1)	9.72	10.84	12.59	13.91	16.17	18.78	21.80	25.32		
24. Participants	3413	4379	5220	6046	7601	9556	12013	15103	+77.15	+ 8.57
25. (24) as % of (22)	27.00	29.10	28.28	28.11	28.65	29.20	29.77	30.35		
26. (24) as % of (2)	26.17	27.83	30.60	31.26	33.85	36.66	39/69	42.97		
27. (24) as % of (1)	2.62	3.15	3.56	3.91	4.63	5.48	6.49	7.68		

VALIDITY

The validity of the process of projection from education statistics must be qualified by the recognition of several problems.

The first is the magnitude of the changes in trends caused by differences between actual and projected figures. For example:

PARTICIPANTS WITH "LESS THAN 4 YEARS HIGH SCHOOL"

(Actual)				(Projected)				% change between (actual) figures	Average % of yearly change
1969	1972	1975	1978	1981	1984	1987	1990		
Enrollment in thousands									
(1985	2066	1756)	(1654	1559	1469	1384	1304)	- 11.54	- 1.92
(1985	2066	1756	2029	(2044	2059	2074	2090)	+ 2.22	+ .25

On the basis of the 1969-1975 trend projection, the number of participants drops 681,000 by 1990, a decrease of 34%. The implication would be that those programs that serve this population face a severe retrenchment in the next 10 years. However, on the basis of the 1969-1978 trend projection, the number of participants rises by 105,000, an increase of 5.29% by 1990. While this could not be considered rampant growth, nonetheless those programs currently serving this population could expect to hold their own. The difference between the gloomy and the faintly optimistic predictions is caused by the difference between the projected and actual registrations for 1978: 1,654,000 projected and 2,029,000 registered, an increase of 375,000 or + 22.76%.

This methodology of forecasting gains validity from its extensive use by NCES, a reputable government agency. Appendix I contains an examination of another series of reports from NCES, their Projections of Educational Statistics. Errors are found when comparing these reports, errors that raise

questions concerning the validity of this particular set of national data.

Yet a different possibility for confounding error is presented by the reports on participation in adult education. The data for the NCES reports were gathered as previously noted. The Census Bureau included questions from NCES in its current population surveys. Comparison shows that the figures from a given survey remain the same in subsequent reports, not the case with the data discussed in Appendix I. Apparently there are no discoveries of three or four hundred thousand adults that were previously unrecorded.

The problem in comparing the NCES reports on participation in adult education arises from the fact that the data base has changed from one survey to another.

The 1969 survey used a set of screener questions designed to eliminate persons assumed to be non-participants in adult education. The first assumption was that full time students would not also participate in adult education. The second assumption was that no-one over the age of 34 would be a full time student. These same assumptions held true for the 1972 survey.

However, by 1975 it was realized that persons over the age of 34 could be full time students, and full time students could also participate in adult education. The 1975 and 1978 reports break out the full time student category. Earlier surveys under-reported participation by an unknown amount, though probably not in excess of the .65% of the total adult population who were full time students and participants in adult education in 1975.

The 1978 report had another change in the data base. Previous surveys included vocational education students among participants in adult education. Since the Bureau of Labor Statistics also gathers data on these same adults, NCES reliquished its claim on them. Fortunately the 1978 report lists both "old method" and "new method" figures, easing the task of comparing several reports.

NCES is very much aware of the difficulties these changes can cause when trying to make comparisons between reports. The 1978 report includes over three pages of single spaced discussion on the "changes in scope and survey methodology." NCES urges caution. The figures used for this study were carefully chosen from the various reports, reflecting insofar as was possible similar data bases. It was not possible to correct for the under-reporting in 1965 and 1968, as discussed above.

The methodology of calculating trends can be applied to data on a smaller scale than nation-wide. Comparisons within an agency or between agencies may present similar problems in the method and reliability of data collection. As NCES puts it, reports evolve over a period of time. This process of evolution, commendable as it may be, necessitates a high degree of caution in selecting appropriate data to compare. "Participation" for example, may mean "enrolled in the course" in one report and "completed the course" in another.

These last few pages should serve to make the point that, dull as it may be, it is important to read the "back of the book." Only by being informed about the methods of collecting data can one make appropriate decisions as to the validity of comparisons and projections.

In spite of the most careful choice of data and meticulous calculations, errors do occur in projections. For instance, the necessary but slight errors due to rounding of figures is magnified over time. Adding the percentages predicted in the table on page 3 finds totals creeping over 100%. The error is least in the short term and greatest in the long term projections.

DISCUSSION OF TRENDS

Sprinkling the projections of education completed by participants with a great many grains of salt, it is still possible to discern broad trends. The implications of these trends impact on the planning process.

The following two pages again present the data for the total adult population and participants in adult education who have completed less than 4 years of high school.

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION (17 years of age and above)

HIGHEST LEVEL OF EDUCATION COMPLETED	ENROLLMENT IN THOUSANDS								% CHANGE 1969-1978	AVERAGE % OF YEARLY CHANGE
		ACTUAL				PROJECTED				
	1969	1972	1975	1978	1981	1984	1987	1990		
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3. (2) as % of (1)	10.01	11.33	11.64	12.52	13.68	14.96	16.35	17.88		
Less than 4 yrs H.S.										
4. All adults	57381	55730	53588	52091	50498	48953	47455	46003	- 9.22	- 1.02
5. (4) as % of (1)	44.07	40.13	36.55	33.72	30.77	28.09	25.64	23.40		
6. Participants	1985	2066	1756	2029	2044	2059	2074	2090	+ 2.20	+ .25
7. (6) as % of (4)	3.46	3.71	3.15	3.90	4.05	4.21	4.37	4.54		
8. (6) as % of (2)	15.22	13.13	10.29	10.49	9.10	7.90	6.85	5.95		
9. (6) as % of (1)	1.51	1.49	1.20	1.31	1.25	1.18	1.12	1.06		

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION

AND BY PARTICIPANTS IN ADULT EDUCATION

Enrollment in Thousands

Less than 4 years high school *

1969:		
Total population	57,381	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	1,985	@@
1972:		
Total population	55,730	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,066	@@
1975:		
Total population	53,583	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	1,756	@@
1978:		
Total population	52,091	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,029	@@
1981:		
Total population	50,498	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,044	@@
1984:		
Total population	48,953	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,059	@@
1987:		
Total population	47,455	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,074	@@
1990:		
Total population	46,003	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Participants	2,090	@@

* 1969 - 1978, Actual figures; 1981 - 1990, Projected figures.

% change, 1969 - 1978: Total population = - 9.22
Participants = + 2.20

Average % of yearly change: Total population = - 1.02
Participants = + .25

The percentage of the adult population with less than 4 years of high school is declining at the rate of 1.02 percent a year. There will be 11,000,000 fewer such adults in 1990 than there were in 1969. This reflects the combination of two demographic trends. The first is that we are adding young adults with at least 4 years of high school to our population at a rate much higher than that of 50 or 60 years ago. We owe this to a combination of our compulsary attendance laws, keeping young people in school until they are 16 years of age, and the current minimal standards for anything above menial employment. The second demographic trend is that our oldest adults, not compelled to remain in high school either by law or by employers' expectations, are literally dying out of the statistics. The percentage of the total adult population with less than 4 years of high school education will fall from 44.07% in 1969 to 23.72% in 1990.

The projected rate of participation in adult education for this same segment of our adult population is only + .25% a year. The number of participants rises by 105,000 between 1969 and 1990.

The future for programs that serve this population must be a matter of concern. These programs must reconcile a virtually unchanging participation level with program costs that are bound to reflect the inflation rate of the economy in general. If nothing is done to change this trend, underwriting must be found, participant fees must rise, and/or the resources allocated must be cut.

The number of participants would rise without changing the trend if the total number of adults who have had less than 4 years of high school somehow increased. Such an increase can be found when special immigrant populations arrive, such as the Southeast Asians. While equally special opportunities for educational programs may result, the effect is likely to be a short term bulge, rather than a long term trend.

The other option is to increase the rate of participation in this population segment. After all, there is a market of some 46,000,000 adults at this level in 1990. A re-examination of the actual number of participants from the four NCES reports shows the following:

ACTUAL PARTICIPANTS IN ADULT EDUCATION WITH "LESS THAN 4 YEARS HIGH SCHOOL"

Year	No. of Participants	% change from previous survey
1969	1,985,000	--------
1972	2,066,000	+ 4.08
1975	1,756,000	- 15.00
1978	2,029,000	+ 15.54

Something went very wrong between 1972 and 1975. Apparently it was corrected by 1978. If the correction holds, the + 5.18 average percent of yearly change between 1975 and 1978 would be more than 20 times the projected rate of + .25%. Instead of 2,090,000 participants in 1990, there would be 3,614,000, an increase of 1,524,000 over the present projection. This increase of 82.07% between 1969 and 1990 would obviously result in an expansion of programs serving this population. The actual participation figures for 1981 will be of particular interest, showing if the previous strength continued or if the rate again slipped.

Meanwhile, adult educators need not wait for the results of the 1981 survey. It is possible that the actual survey may be delayed, since this will be the first time an adult education survey falls so close to a national census year. It would be a pity to break the triennial pattern maintained through the cooperation of NCES and the Census Bureau.

The Participation in Adult Education reports include a variety of other data, such as the types of programs chosen by participants at the various levels of educational attainment. These tables can be consulted to determine strategies to increase the rate of participation in programs that are less attractive while maintaining or increasing the rate in programs that are drawing participants at a reasonable level.

Programs serving this population have an advantage in seeking external funding. There is increasing attention being paid to the problems faced by persons with low levels of educational attainment, as well as the problems faced by society in meeting their needs if they are unable to provide for themselves. In addition, there is increasing reluctance to provide funding for programs that serve those who are already well provided with funding of their own, i.e., persons who have attained high levels of education and high levels of employment.

There is no doubt that effort will be necessary to maintain even some of the progress shown between 1975 and 1978. If the trend projected on the basis of the 1969 through 1978 figures continues, the percentage of the total population participating in this programs will slip to barely more than 1% by 1990. It may be difficult to justify high levels of funding for programs that serve so few prople, programs that apparently stagnate rather than attract and excite. The attraction to improve the lot of the under-educated may be offset by the attraction to lessen the tax burden on the middle class.

Participation data for the remaining three levels of educational attainment will be considered together since they share much the same set of characteristics: their segments of the population are growing faster than the total population, and their rates of participation are growing faster still. Even though the increase in the participation rate for the "4 years high school" segment is slightly below the overall increase in participation in adult education, there are over 4,000,000 more participants in 1990 than there were in 1969.

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION (17 years of age and above)

HIGHEST LEVEL OF EDUCATION COMPLETED	ENROLLMENT IN THOUSANDS								% CHANGE 1969-1978	AVERAGE % OF YEARLY CHANGE
	1969	ACTUAL 1972	1975	1978	1981	PROJECTED 1984	1987	1990		
1. Total population	130215	138865	146602	154496	164090	174279	185101	196595	+18.65	+ 2.07
2. Total participants	13041	15734	17059	19338	22453	26070	30269	35145	+48.29	+ 5.37
3. (2) as % of (1)	10.01	11.33	11.64	12.52	13.68	14.96	16.35	17.88		
4 years High School										
10. All Adults	44680	49679	53755	56847	62009	67639	73781	80480	+27.23	+3.03
11. (10) as % of (1)	34.30	35.78	36.67	36.80	37.79	38.81	39.86	40.94		
12. Participants	5067	5916	6396	6641	7328	8086	8923	9847	+31.06	+3.45
13. (12) as % of (10)	11.34	11.91	11.90	11.68	11.82	11.95	12.09	12.24		
14. (12) as % of (2)	38.85	37.60	37.49	34.34	32.64	31.04	29.48	28.02		
15. (12) as % of (1)	3.89	4.26	4.36	4.30	4.47	4.64	4.82	5.01		

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION, Enrollment in Thousands

4 years high school *

1969:		
Total population	44,680	**********
Participants	5,067	((((((
1972:		
Total population	49,679	**********
Participants	5,916	((((((
1975:		
Total population	53,755	**********
Participants	6,396	((((((
1978:		
Total population	56,347	**********
Participants	6,641	((((((
1981:		
Total population	62,009	**********
Participants	7,328	((((((
1984:		
Total population	67,639	**********
Participants	8,086	((((((
1987:		
Total population	73,781	**********
Participants	3,923	((((((
1990:		
Total population	80,480	**********
Participants	9,847	((((((

* 1969 - 1978, Actual figures; 1981 - 1990, Projected figures.
% change, 1969 - 1978: Total population = + 27.23, Participants = + 31.06
Average % of yearly change: Total population = + 3.03, Participants = + 3.45

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EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION (17 years of age and above)

HIGHEST LEVEL OF EDUCATION COMPLETED	ENROLLMENT IN THOUSANDS								% CHANGE 1969-1978	AVERAGE % OF YEARLY CHANGE
		ACTUAL				PROJECTED				
	1969	1972	1975	1978	1981	1984	1987	1990		
1. Total population	130215	138865	146602	154496	164090	174279	185101	196595	+18.65	+ 2.07
2. Total participants	13041	15734	17059	19338	22453	26070	30269	35145	+48.29	+ 5.37
3. (2) as % of (1)	10.01	11.33	11.64	12.52	13.68	14.96	16.35	17.88		
1-3 years College										
16. All adults	15537	18407	21002	24046	28437	33630	39771	47033	+54.77	+ 6.09
17. (16) as % of (1)	11.93	13.26	14.33	15.56	17.33	19.30	21.49	23.92		
18. Participants	2576	3373	3687	4622	5846	7394	9352	11828	+79.43	+ 8.83
19. (18) as % of (16)	16.58	18.32	17.56	19.22	20.56	21.99	23.51	25.15		
20. (18) as % of (2)	19.75	21.44	21.61	23.90	26.04	28.36	30.90	33.65		
21. (18) as % of (1)	1.97	2.43	2.51	2.99	3.56	4.24	5.05	6.02		

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION

AND BY PARTICIPANTS IN ADULT EDUCATION

Enrollment in Thousands

1-3 years college *

1969:		
Total population	15,537	###############
Participants	2,576	***
1972:		
Total population	18,407	##################
Participants	3,373	***
1975:		
Total population	21,002	####################
Participants	3,687	****
1978:		
Total population	24,046	#######################
Participants	4,622	*****
1981:		
Total population	28,437	XXXXXXXXXXXXXXXXXXXXXXXXXXX
Participants	5,346	######
1984:		
Total population	33,630	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Participants	7,39	########
1987:		
Total population	39,771	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Participants	9,352	#########
1990:		
Total population	47,033	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Participants	11,328	###########

* 1969 - 1978, Actual figures; 1981 - 1990, Projected figures.

% change, 1969 - 1978: Total population = + 54.77
Participants = + 79.43

Average % of yearly change: Total population = + 6.09
Participants = + 8.83

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION AND BY PARTICIPANTS IN ADULT EDUCATION (17 years of age and above)

HIGHEST LEVEL OF EDUCATION COMPLETED	ENROLLMENT IN THOUSANDS								% CHANGE 1969-1978	AVERAGE % OF YEARLY CHANGE
	1969	ACTUAL 1972	1975	1978	1981	PROJECTED 1984	1987	1990		
1. Total population	130215	138865	146602	154496	164090	174279	185101	196595	+18.65	+ 2.07
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4 + years College										
22. All adults	12655	15049	18457	21512	26531	32721	40355	49770	+69.99	+ 7.78
23. (22) as % of (1)	9.72	10.84	12.59	13.91	16.17	18.78	21.80	25.32		
24. Participants	3413	4379	5220	6046	7601	9556	12013	15103	+77.15	+ 8.57
25. (24) as % of (22)	27.00	29.10	28.28	28.11	28.65	29.20	29.77	30.35		
26. (24) as % of (2)	26.17	27.83	30.60	31.26	33.85	36.66	39/69	42.97		
27. (24) as % of (1)	2.62	3.15	3.56	3.91	4.63	5.48	6.49	7.68		

EDUCATION COMPLETED BY THE TOTAL ADULT POPULATION

AND BY PARTICIPANTS IN ADULT EDUCATION

Enrollment in Thousands

4+ years college *

1969:		
Total population	12,655	
Participants	3,413	
1972:		
Total population	15,049	
Participants	4,379	
1975:		
Total population	18,457	
Participants	5,220	
1978:		
Total population	21,512	
Participants	6,046	
1981:		
Total population	26,531	
Participants	7,601	
1984:		
Total population	32,721	
Participants	9,556	
1987:		
Total population	40,355	
Participants	12,013	
1990:		
Total population	49,770	
Participants	15,103	

* 1969 - 1978, Actual figures; 1981 - 1990, Projected figures.

% change, 1969 - 1978: Total population = + 69.99
Participants = + 77.15

Average % of yearly change: Total population = + 7.78
Participants = + 8.57

At the far end of the education completed tables, the population with "4 or more years of college" is growing at an annual rate of .47% of all adults while participation in adult education activities by these same persons is increasing at the rate of .58% per year. This increase is exaggerated because the participation rate is much greater than the percentage of the population that achieved this educational level, 29.7% compared to 12.59% in 1975. The projections show that by 1990, 42.97% of the participants in adult education will have completed 4 or more years of college, while 25.32% of the total population will have achieved this educational level. In terms of people, there were 6,046,000 participants in 1978; the projected figure for 1990 is 15,103,000, or an increase of 149.80%. The obvious implication is a substantial increase in the number of programs serving this population.

Complacency would be inappropriate, however. These trends were calculated on the basis of the current attractiveness of adult education programs for these already well educated persons. The definition of "attractive" must continue to be updated, lest the programs available become stale and our paying customers look elsewhere for their further education.

CONCLUSION

The overall procedure followed was to obtain reports from an "official" source, identify subject matter of particular interest, extract and compare pertinent data, identify trends, and project accordingly. Since the validity of the projections is in doubt, continued monitoring and updating is imperative. Newly issued reports should be used to adjust present and projected figures so that they reflect as accurate a picture as possible.

A profile of future participants in adult education can be drawn from repeated application of this process, incorporating as much detail as time and data permit. While the profile may change in detail, the basic configuration would seem to be sufficiently defined so as to permit planning. In turn, planning may permit the development of a proactive rather than a reactive stance towards adult education participants and programs.

APPENDIX I

An Examination of NCES' Projections of Education Statistics to ....

The National Center for Education Statistics also publishes another series of reports: Projections of Education Statistics to .... Data were gathered from these reports published in 1972, 1974, 1976 and 1977, each of which projects about 10 years into the future. A comparison of these data follows.

COMPARISON OF PROJECTED EDUCATIONAL STATISTICS, GRADES K-8

		POPULATION AGED 5-13 (in thousands)				ENROLLMENT GRADES K-8 (in thousands)				Percent of Population Enrolled (calculated from data)			
		Year Projected:				Year Projected:				Year Projected:			
		1972	1974	1976	1977	1972	1974	1976	1977	1972	1974	1976	1977
YEAR	1961	33,461				32,695				97.7			
	1962	34,111				33,537				98.3			
	1963	34,781				34,304				98.6			
	1964	35,446				35,025				98.8			
	1965	36,048				35,463				98.4			
	1966	36,631				35,945				98.1			
	1967	37,017				36,241				97.9			
	1968	37,243				36,626				98.3			
	1969	36,443				36,797				98.6			
	1970	36,443				36,677				100.6			
	1971	35,790*				36,165 *			36,265@	101.0 *			100.2
	1972	35,040	35,257			35,600	35,531		35,831	101.6	100.8		101.6
	1973	34,303	34,555*			35,000	34,933 *		35,353	102.0	101.1 *		102.3
	1974	33,691	33,613	33,903 *		34,400	34,200	34,419 *	34,821	102.1	101.7	101.5 *	102.7
	1975	33,077	33,095	33,300	33,300*	33,800	33,600	33,800	34,445*	102.9	101.5	101.5	103.4 *
	1976	32,783	32,664	32,763	32,763	33,500	33,100	33,300	33,972	102.2	101.3	101.6	103.7
	1977	32,675	32,011	32,023	32,023	33,500	32,500	32,600	33,361	102.5	101.5	101.8	104.2
	1978	32,791	31,341	31,210	31,210	33,600	31,700	31,800	32,636	102.5	101.1	101.9	104.6
	1979	33,224	30,911	30,548	30,548	34,300	31,200	31,200	32,021	103.2	100.9	102.1	104.8
	1980	33,950	30,804	30,164	30,164	35,400	31,200	31,200	31,515	104.3	101.3	103.4	104.5
	1981	34,924	30,940	29,983	29,983	36,700	31,300	31,500	31,120	105.1	101.2	105.1	103.8
	1982	36,003	31,234	29,977	29,977		31,700	32,200	30,785		101.2	107.4	102.7
	1983		31,549	30,064	30,064		32,100	33,000	30,550		101.7	110.0	101.6
	1984			30,213	30,213			33,900	30,348			112.2	100.4
	1985			30,508	30,508				30,210				99.0
	1986				31,171								

* Figures below this line are projections.
@ These figures are included because they represent a change over those previously reported.

Sources: Table B-1, p. 163, and Table B-3, p. 165, Projections of Educational Statistics to 1981-82, 1972 Edition
Table B-1, p. 153, and Table B-3, p. 155, Projections of Educational Statistics to 1983-84, 1974 Edition
Table B-1, p. 153, and Table B-3, p. 155, Projections of Education Statistics to 1984-85, 1976 Edition
Table B-1, p. 131, and Table B-3, p. 133, Projections of Education Statistics to 1985-86, 1977 Edition

COMPARISON OF PROJECTED EDUCATIONAL STATISTICS, GRADES 9-12

		POPULATION AGED 14-17 (in thousands)				ENROLLMENT GRADES 9-12 (in thousands)				PERCENT OF POPULATION ENROLLED (calculated from data)			
		Year Projected:				Year Projected:				Year Projected:			
		1972	1974	1976	1977	1972	1974	1976	1977	1972	1974	1976	1977
YEAR	1961	12.199				10,469				85.8			
	1962	12,951				11,312				87.3			
	1963	13,693				12,183				89.0			
	1964	14,215				12,691				89.3			
	1965	14,164				13,010				91.9			
	1966	14,373				13,294				92.5			
	1967	14,720				13,650				92.7			
	1968	15,146				14,118				93.2			
	1969	15,553				14,322				92.1			
	1970	15,992				14,632				91.5			
	1971	16,343 *				15,116 *				92.5 *			
	1972	16,583	16,595			15,400	15,113		15,213 @	92.9	91.1		91.7 @
	1973	16,752	16,770 *			15,700	15,276 *		15,377	93.7	91.1 *		91.7
	1974	16,812	16,813	16,880 *		15,900	15,500	15,337 *	15,532	94.6	92.2	90.9 *	92.0
	1975	16,764	16,797	16,902	16,902 *	16,000	15,600	15,500	15,694 *	95.4	92.3	91.7	92.9
	1976	16,645	16,695	16,845	16,845	15,900	15,600	15,600	15,721	96.1	93.4	92.6	93.3
	1977	16,479	16,536	16,728	16,728	15,700	15,500	15,500	15,658	96.5	93.7	92.7	93.6 *
	1978	16,236	16,254	16,528	16,528	15,300	15,300	15,400	15,501	96.7	94.1	93.2	93.8
	1979	15,806	15,864	16,122	16,122	14,800	14,900	15,100	15,125	96.8	93.9	93.7	93.8
	1980	15,289	15,362	15,608	15,608	14,300	14,400	14,600	14,633	96.8	93.7	93.5	93.8
	1981	14,734	14,773	15,062	15,062		13,900	14,100	14,099	97.1	94.3	93.6	93.6
	1982	14,259	14,241	14,553	14,553		13,300	13,600	13,590		93.4	93.5	93.4
	1983		13,996	14,283	14,283		13,100	13,300	13,312		93.6	93.1	93.2
	1984			14,279	14,279			13,300	13,278			92.6	93.0
	1985			14,358	14,358				13,328				92.5
	1986				14,219								

* Figures below this line are projections.
@ These figures are included because they represent a change over those previously reported.

Sources: Table B-2, p. 164, and Table B-3, p. 165, Projections of Educational Statistics to 1981-82, 1972 Edition
Table B-2, p. 154, and Table B-3, p. 155, Projections of Educational Statistics to 1983-84, 1974 Edition
Table B-2, p. 154, and Table B-3, p. 155, Projections of Education Statistics to 1984-85, 1976 Edition
Table B-2, p. 132, and Table B-3, p. 133, Projections of Education Statistics to 1985-86, 1977 Edition

COMPARISON OF PROJECTED EDUCATIONAL STATISTICS, All Institutions of Higher Education, Degree Credit and Non-degree Credit, 4- year and 2-year.

		POPULATION AGED 18-21 (in thousands)				ENROLLMENT, as above (in thousands)				Percent of POPULATION ENROLLED (calculated from data)			
		Year Projected:				Year Projected:				Year Projected:			
		1972	1974	1976	1977	1972	1974	1976	1977	1972	1974	1976	1977
YEAR	1961	10,379				4,047				39.0			
	1962	10,857				4,404				40.6			
	1963	11,195	11,199 @			4,766				42.6			
	1964	11,519	11,542			5,280				45.8	45.7 @		
	1965	12,309	12,371			5,981	5,921 @			48.6	47.9		
	1966	13,065	13,120			6.390				48.9	48.7		
	1967	13,798	13,923			6,912				50.09	49.6		
	1968	14,301	14,488			7,513				52.5	51.9		
	1969	14,236	14,779			8,005				56.2	55.3		
	1970	14,616	15,120			8,581				58.7	58.1		
	1971	14,966 *	15,513			8,949 *				59.8 *	59.2		
	1972	15,374	15,864 *			9,124	9,215			59.3	59.4		
	1973	15,703	16,047			9,675	9,602 *			61.6	60.5 *		
	1974	16,056	16,376	16,194 *		10,117	9,709	10,224 *		63.0	60.5	63.1 *	
	1975	16,406	16,608	16,545	16,545 *	10,562	9,903	10,619	11,185 *	64.4	60.5	64.2	67.6 *
	1976	16,646	16,766	16,806	16,806	10,977	10,129	10,964	11,693	65.9	61.0	65.2	69.6
	1977	16,816	16,900	16,984	16,984	11,369	10,371	11,266	12,146	67.6	61.9	66.3	71.5
	1978	16,876	16,883	17,099	17,099	11,722	10,557	11,518	12,572	69.5	62.5	67.4	73.5
	1979	16,825	16,782	17,122	17,122	12,023	10,679	11,702	12,928	71.5	63.3	68.3	75.5
	1980	16,712	16,621	17,069	17,069	12,293	10,756	11,847	13,214	73.6	64.1	69.4	77.4
	1981	16,545	16,342	16,960	16,960	12,532	10,791	11,926	13,477	75.9	64.9	70.3	79.5
	1982	16,302	15,955	16,760	16,760		10,738	11,957	13,629		65.7	71.3	81.3
	1983		15,456	16,351	16,351		10,577	11,822	13,643		66.3	72.3	83.4
	1984			15,839	15,839			11,610	13,524			73.3	85.4
	1985			15,286	15,286				13,360				87.4
	1986				14,772								

* Figures below this line are projections.
@ These figures are included because they represent a change over those previously reported.

Sources: Table B-2, p. 164, and Table 5, p. 23, Projections of Educational Statistics to 1981-82, 1972 Edition
Table B-2, p. 154, and Table 5, p. 21, Projections of Educational Statistics to 1983-84, 1974 Edition
Table B-2, p. 154, and Table 5, p. 22, Projections of Education Statistics to 1984-85, 1976 Edition
Table B-2, p. 132, and Table 5, p. 16, Projections of Education Statistics to 1985-86, 1977 Edition

The first column on each chart is the population within the given age range identified by the National Center for Education Statistics (NCES) as appropriate for the grade levels. "School-age population" is compared to grades K-8 enrollment, "high school- and college-age population" is compared to grades 9-12 and enrollment in institutions of higher education.

The "school-age population" is projected in several series, representing different fertility rates. In 1972, there were series C, D and E, representing 2.775, 2.450 and 2.110 children per woman respectively. Series D was chosen by NCES for its education projections as "most closely approximating the rate indicated by the most recent data on births." (p. 163, Projections....1981-82.) In 1974, NCES discussed series D, E, and F to project populations, based on birth rates of 2.5, 2.1 and 1.8 children per woman respectively. Series E was used, i.e., a birth rate of 2.1. By 1976, NCES and the Census Bureau had changed their nomenclature to Series I, II and III, representing birth rates of 2.7, 2.1 and 1.7 children per woman. Series II was used both in 1976 and 1977 for projected education statistics, again because it "most closely agreed with the most recent expected fertility data." (p. 131, Projections....1985-86.)

It might be reasonable to expect that projected populations in the age cohort 5-13 would agree between series E in 1974 and series II in 1976/77 since both series are based on the same fertility rate. Presumably either the children were alive during the year projected or the women who would be or already were of child bearing age. Yet the populations do not agree. The projection made in 1974 for the year 1982 is 4.12% higher than the projection made in 1976/77. The projection made in 1974 is 4.93% higher for the year 1983 than the projection made in 1976/77. One is at a loss to explain this change. The number of children involved is 1,257,000 for 1982 and 1,385,000 for 1983. It is most unlikely that a tragedy is projected that

would reduce the population of child-bearing women (or the population of virile men). Is there a pediatric epidemic due?

Population figures are even more extraordinary when considering the 14-17 and 18-21 cohorts. Each NCES table B-2 includes the following as a footnote: "No fertility assumptions are used in this table because the persons included are already born." However the count of persons already born can vary as much as 357,000 or 2.14% in the 14-17 cohort, and as much as 895,000 or 5.79% in the 18-21 cohort! (Comparisons were made of the projections for 1982 in the 14-17 cohort and for 1983 in the 18-21 cohort.)

Similar inexplicable problems arise when comparing enrollment statistics. For example, in 1977, it was discovered that 300,000 more children had been enrolled in grades K-8 in 1972 than had been previously reported, an error of .84%. This error may well be within the bounds of probability. However, 300,000 more or less children enrolled in grades K-8 mean a large difference in the number of classrooms needed and the personnel to staff them. It is not implausable to imagine learned articles concerning the viability of education as a career being much more sanguine in 1977 than in 1972. The error for 1973 is even greater--420,000 children retroactively "discovered" in 1977, or an error of 1.20%.

The enrollment statistics for grades 9-12 ought to be more accurate, since there are about half as many students to count. The count for 1974 was off by 195,000, it was found in 1977, for an error of 1.27%. The supposition is not correct; the rate of error rose.

Enrollment statistics for higher education seem to be a source of constant surprise to NCES. In 1972, enrollment figures were known for 1971 and projected for 1972. The actual enrollment for 1972 was 91,000 more; the figure projected for 1974 in 1974 fell 515,000 short of actual enrollments; the one-year ahead projection for 1975 was 556,000 short. The 1978 Digest of Education

Statistics was consulted for figures for 1976 and 1977 actual enrollments. NCES seems to have overreacted. The projection for 1976 was high by 681,000 over the actual enrollment; the projection for 1977 was high by 786,000. This latter represents an error of 6.47%.

The effect of errors of this magnitude upon the percent of population enrolled compounds the changes that would occur due to the process by which the figures are computed. According to the footnotes for Tables B-3 in each of the Projections, trends are determined for a 10 year period preceding the year the projections are made. Obviously a rise in the year newly included in the 10 year period will cause a rise in the projections for the 10 years ahead. Conversely, a fall will cause a fall. Projections for grades K-8 for 1984 vary by 3,000,000--the population enrolled varies by 11.8 percentage points. If one looks at projections for 1981, the percent of population enrolled in all institutions of higher education is 75.9% projected in 1972, 64.9% projected in 1974, 70.3% projected in 1976, and 79.5% projected in 1977. The spread between 1974 and 1977 projections for 1981 is 14.6 percentage points.

APPENDIX II

BIBLIOGRAPHY

All the publications below were under the sponsorship of the National Center for Education Statistics, and published by the U.S. Government Printing Office, Washington, D.C. The year of publication follows the title, with the exception of the one unpublished report.

Digest of Education Statistics, 1977-78, 1978

Participation in Adult Education Final Report, 1969, 1974

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Projections of Educational Statistics to 1981-81, 1972 Edition, 1973

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Anderson, Richard and Darkenwald, Gordon. Participation and Persistence in American Adult Education. New York: College Entrance Examination Board, 1979.

Charner, Ivan. Patterns of Adult Participation in Learning Activities. Washington, D.C.: National Institute for Work and Learning, 1980.

Momeni, Jamshid. Adult Participation In Education: Past Trends and Some Projections for The 1980s. Washington, D.C.: National Institute for Work and Learning, 1980.

While Anderson and Darkenwald, Charner and Momeni were not used as references in writing this paper, they provide interesting examples of data analyses and trend projections applied to adult education.